

**DW-SRF 2013 Project**  
**Green Project Reserve Calculation**

Green Project Reserve Methodology using format from EPA's • June 22, 2009 guidance for GPR business cases

**ESTIMATE OF VALUE OF WATER LOSS WORKSHEET**

<b>SRF PROJECT ID #</b>	<b>2013-25</b>
1 Date:	25-Jul-13
2 PWSID #	ME0091300
3 System	<b>PORTLAND WATER DISTRICT</b>
4 Project Name	Central Street
5 Location	Portland
6 Engineering Consultant	District
7 Existing Main size, age, and type	2" GI and 8" cast iron unlined pipe 1925 vintage
8 Proposed New Water Main size and type	8" Ductile Iron cement lined pipe
9 New Main Pipe Length	2,100
10 Estimated Project Cost	\$ 428,800

**Note: Data from Utilities Annual Report to Maine Public Utilities Commission**

<u>Page</u>	<u>Line</u>	<u>Description</u>	<u>Units</u>	<u>2011 data</u>
W-12	15	Total Production Water	gallons per year	7,673,583,000
W-12	17	Total Revenue Water	gallons per year	6,465,814,000
W-12	19	Total Non-Revenue Water	gallons per year	1,207,769,000
W-12	19	Percent Non-Revenue Water		16%
W-12	22	Utility Usage - treatment	gallons per year	-
W-12	23	Utility Usage - hydrant flushing	gallons per year	15,631,000
W-12	14	Utility Usage - bleeders	gallons per year	97,792,000
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	9,686,000
W-12	30	Fire Protection	gallons per year	61,434,000
W-12	31	Main Breaks	gallons per year	371,344,000
W-12	35	Flushing Mains	gallons per year	4,039,000
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	559,926,000
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	647,843,000
		<b>Estimated Water Loss From ALL Breaks, Leaks, &amp; Bleeders</b>	<b>gallons per year</b>	<b>1,130,704,000</b>
		<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>		
		<b>% of Water Loss of Total Production Water</b>		<b>15%</b>
		<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>		
W-9	9	Total Transmission Mains	feet	218,764
W-9	23	Total Distribution Mains	feet	5,063,307
		Total Mains in Service	feet	5,282,071
			miles	1,000
		<u>Estimated Distribution System Losses:</u>		
		Loss Water per mile of pipe	gallons per mile per year	1,130,261
		Loss Water per foot of pipe per year	gallons per foot per year	214
		Loss water per foot of pipe per day	gallons per foot per day	0.59
		<u>Water loss will vary with age of water main - assume Straight line projection as follows:</u>		
		0 to 25 year old pipe	0 % of Total Loss	gallons per mile per year -
		26 to 50 year old pipe	10% of Total Loss	gallons per mile per year 113,026
		51 to 75 year old pipe	30% of Total Loss	gallons per mile per year 339,078
		over 75 year old pipe	60% of Total Loss	gallons per mile per year 678,156
			All Losses:	1,130,261
		Age of Main to be replaced	years	100
		Length of Main to be Replaced	mile	0.40
		<b>CALCULATED WATER LOSS - FOR PROPOSED PROJECT</b>	<b>gallons per year</b>	<b>134,861</b>
W-2	29c	<b>Total PRODUCTION COST of Water</b>	<b>\$/year</b>	<b>\$ 13,448,671</b>
W-12	15	Total Production Water	1,000 gallons per year	7,673,583
		<b>Production Cost of Water</b>	<b>per 1,000 gallons</b>	<b>\$ 1.75</b>
		<b>PROJECTED ANNUAL VALUE of WATER LOSS</b>	<b>per year</b>	<b>\$ 236</b>

Annual Savings	\$	236
PV Factor ( uniform series present worth factor (1%, 75 years):	\$	52.587
<b>Present Value of Savings over Economic life of pipeline:</b>	<b>\$</b>	<b>12,429</b>
<b>Project Cost</b>	<b>\$</b>	<b>428,800</b>
PV Percent of Project Cost:		2.9%
<b>ESTIMATED % Green</b>		<b>2.9%</b>
<b>\$ Amount Green</b>	<b>\$</b>	<b>12,429</b>